

IN THE CLAIMS

SUB E17

1. (Currently Amended) A data storage and retrieval apparatus having a data processor, including a memory, central processing unit and a first storage medium, which performs migration for transferring a file stored in the first storage medium to a second storage medium provided outside of the data processor and generates an information file including access information in the first storage medium, comprising:

an information acquisition means for reading said access information from the information file stored in the first storage medium when the data processor accesses a migrated file,

a file opening means for opening the transferred file in the second storage medium based on the access information acquired by the information acquisition means, and

a reading means for reading the stored data from the opened file in the second storage medium and loading the read data in to a predetermined area on the memory of the data processor and storing the same thereat without transferring to or storing the read data to the first storage medium, ~~wherein said memory is directly coupled to the central processing unit~~ during a reverse migration process.

2. (Original) A data storage and retrieval apparatus as set forth in claim 1, wherein the data processor is a computer.

3. (Original) A data storage and retrieval apparatus as set forth in claim 1, wherein the first storage medium is a hard disk.

4. (Original) A data storage and retrieval apparatus as set forth in claim 1, wherein the second storage medium is a removable medium.

5. (Original) A data storage and retrieval apparatus as set forth in claim 1, wherein the data processor determines a priority of migration based on a predetermined standard for a plurality of files stored on the first storage medium and performs the migration from the file with the highest priority.

6. (Original) A data storage and retrieval apparatus as set forth in claim 1, wherein a file stored on the first storage medium has an information region for storing file management information and a data region for storing data; all of the data of the data region is transferred to the second storage medium by the migration; and an information file is generated in the first storage medium.

7. (Original) A data storage and retrieval apparatus as set forth in claim 1, wherein the information file contains the file management information, access information to the file transferred to the second storage medium, and size information of the file on the first storage medium before the migration.

8. (Original) A data storage and retrieval apparatus as set forth in claim 1, wherein the data region of the file on the first storage medium is opened up after the information file is generated.

9. (Original) A data storage and retrieval apparatus as set forth in claim 6, wherein a file including the transferred file and the access information to the data is formed in the second storage medium by the migration.

10. (Original) A data storage and retrieval apparatus as set forth in claim 1, wherein the file opening means generates a file descriptor specifying a file transferred to the second storage medium based on the access information.

11. (Original) A data storage and retrieval apparatus as set forth in claim 10, wherein the reading means reads the content of a file opened by the opening means based on the file descriptor and stores it in a predetermined region of the memory of the data processor.

12. (Previously Amended) A data storage and retrieval apparatus as set forth in claim 10, further comprising a file closing means for closing a file opened by the opening means based on the file descriptor after the data finishes being read.

13. (Currently Amended) A data storage and retrieval method wherein a data processor, including a memory, central processing unit and a first storage medium, performs migration for transferring a file stored in the first storage medium to a second storage medium provided outside of the data processor, and generates an information file including access information in the first storage medium, comprising the steps of:

reading said access information from the information file stored in the first storage medium when the data processor accesses a migrated file,

opening the transferred file in the second storage medium based on the access information acquired by reading said information file, and
reading the stored data from the opened file in the second storage medium and transferring the read data in to a predetermined area on the memory of the data processor and storing the same thereat without transferring to or storing the read data to the first storage medium, ~~wherein said memory is directly coupled to the central processing unit~~ during a reverse migration process.

14. (Original) A data storage and retrieval method as set forth in claim 13, wherein the data processor determines a priority of migration based on a predetermined standard for a plurality of files stored on the first storage medium and performs the migration from the file with the highest priority.

15. (Original) A data storage and retrieval method as set forth in claim 13, wherein a file stored on the first storage medium has an information region for storing file management information and a data region for storing data and the migration comprises transferring the data of the data region to the second storage medium and generating an information file in the first storage medium.

16. (Original) A data storage and retrieval method as set forth in claim 15, further comprising a step of opening up the data region of the file on the first storage medium after generating the information file.

17. (Original)

A data storage and retrieval method as set forth in claim 13,

wherein the migration forms a file containing the transferred data and access information to the data in the second storage medium.